



Washington State Department of Transportation



American Public Works Association
Washington State Chapter

Technical Commentary for Standard Plan A-4 Inlet Placement at Bridge End

General Information

Background: Standard Plan A-4 designates the general location of a Catch Basin Type 1 or Grate Inlet Type 2 used for the capture of bridge deck runoff. The catch basin or inlet is located approximately 2 to 3 feet downstream of the bridge approach slab, but the exact location can vary from site to site. In rural areas, an asphalt extruded curb is used to convey bridge deck runoff past the approach slab and into the catch basin. In urban areas with curb and gutters or median barrier, asphalt extruded curbing is not necessary.

The catch basin is generally not placed in either the bridge or the bridge approach slab due to the presence of reinforcement steel in both of those structures. Also, it may be necessary to specify more than one catch basin at the end of a bridge. When this occurs, the additional catch basin(s) are generally placed at about 25 foot intervals moving downstream from the first catch basin. This allows flow that bypasses the first catch basin to move back against the extruded curbing, which in turn allows the next catch basin downstream to intercept the maximum amount of flow. A methodology for pavement drainage design is described in Chapter 5 of WSDOT's *Hydraulics Manual*.

A vaned grate is shown on the plan. The vaned grate configuration provides improved hydraulic capacity into the catch basin and also decreases clogging due to leaves and other debris.

Applicable Specifications

- 5-05.3(19) Reinforced Concrete Bridge Approach Slabs
- 7-05 Manholes, Inlets, and Catch Basins
- 8-04 Curbs, Gutters, and Spillways
- 8-11 Guardrail

Referenced Standard Plans

A-2 Bridge Approach Slab
B-1 Catch Basin Type 1
B-4c Grate Inlet Type 2
B-2b Vaned Grate for Catch Basin and Inlet
C-1 Beam Guardrail (W Beam)
C-2a Guardrail Placement (Case 5)
F-2b Extruded Curb

Other Information

Design Methodology: WSDOT *Hydraulics Manual*, Chapter 5

This commentary sheet is maintained by the Olympia Service Center Hydraulics Branch. Please send any suggestions for additions or modifications to :

Postal	E-mail
Transportation Building	matt-witecki@wsdot.wa.gov
P.O. Box 47329	
Olympia, WA 98504-7329	
Attn: Matt Witecki	

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